



## SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED  
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

### W6IFE Newsletter January 2010 Edition

President John Oppen KJ6HZ 4705 Ninth St Riverside, CA 92501951-288-1207 john.d.open@boeing.com.  
Vice President Doug Millar, K6JEY 2791 Cedar Ave Long Beach, CA 90806 562-424-3737 dmillar@moonlink.net  
Recording Sec Larry Johnston K6HLH 16611 E Valeport Lancaster CA 93535 661-264-3126 k6hlh@sbcglobal.net  
Corresponding Sec Jeff Fort Kn6VR 10245 White Road Phelan CA 92371 909-994-2232 jnjfort@Verizon.net  
Treasurer Dick Kolbly, K6HIJ 26335 Community Barstow, CA 92311 760-253-2477 dick@eventhorizons.com  
Editor Bill Burns, WA6QYR 247 Rebel Rd Ridgecrest, CA 93555 760-375-8566 bburns@ridgecrest.ca.us  
Webmaster Dave Glawson, WA6CGR 1644 N. Wilmington Blvd Wilmington, CA 90744 310-977-0916  
wa6cgr@ham-radio.com  
ARRL Interface Frank Kelly, WB6CWN PO Box 1246, Thousand Oaks, CA 91358 805 558-6199  
fm.kelly@verizon.net  
W6IFE License Trustee Ed Munn, W6OYJ 6255 Radcliffe Dr. San Diego, CA 92122 858-453-4563  
w6oyj@amsat.org.

At the **7 January 2010** SBMS meeting the "Tech Talk" will be USB power sensors from Mini-Circuits, HP and Rhode and Schwarz.. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

### REMINDER- NO PARKING IN THE CHURCH LOT

**Last meeting-** Doug, K6JEY; Larry, K6HLH and Jeff, KN6VR presented information about operating on 1296 MHz band. Doug suggested operating with a small portable rig such as an FT817 is better than home station. He modeled a small wooden stand to let the operator view screen easier. Larry suggested that it was a waste of time to go portable. He has a 60 ft tower and 60 ft trees. Larry runs GS15 tube PA for 350 w. Power helps. His flex radio station likes to run WSPR mode. 200 ft to the tower is 1 5/8 cable and 7/8 cable up the tower. 35 elements of M2 antenna. Jeff runs 10 w with 7/8 and 1/2 cables having maybe 3 db loss. The clue is to get gains matched on rig and PA. Jeff uses an X frame on the front of his yagis to get them pointing in the same direction with winds. Jeff recommends when grinding aluminum, to use a masonry blade. It doesn't clog up with particles as fast. January will start the planning process for MUD2010. There was a discussion of changing rules for VUAC contesting words for above 300 GHz. The concern was with the words "coherent electronic detection" in paragraph 1.12. Wayne, N6NB our west coast representative, lead the discussion. There was concern over laser use in pointing near aircraft and the general power density issue. Concern on use of just "ham bands only" and the above 300 GHz. We want to encourage technology experimenting. San Diego Group is experimenting with cloud bounce and over the hill proration. SBMS consensus was to drop the word Coherent. 18 people present.

#### Scheduling.

4 Feb- "the old days"- SBMS was famous for developing several new techniques in microwave communications.  
4 March- TBD. Got any good ideas? Nominations of officers  
1 April-- this ought to be a good one... Election of officers

MUD 2010 Wednesday October 20 ----- Sunday October 24 Los Angeles area. SBMS is sponsoring it.

### **ARRL 2010 Contest Calendar**

Jan 1 Straight key night  
23-25 Jan VHF Sweepstakes  
June 12-14 VHF QSO Party  
June 26 Field Day  
August 7-8 UHF Contest  
August 21-22 10 GHz and UP contest 1st weekend  
September 11-13 September VHF QSO Party  
September 18-19 10 GHz and UP second half

### **European EME Contest Calendar 2010**

March 21/22 3.4 GHz  
March 27/28 144 MHz and 10 GHz + Up  
April 17/18 2.3 GHz  
April 24/25 432 MHz, 5760 MHz  
May 22/23 1.2 GHz

### **Wants and Gots for sale.**

**Wanted** wr90 flanges Chris N9RIN cshoff@yahoo.com

**For Sale-** Gonset 20mtr 5 elm beam \$10; 220MHz heavy duty 7 el beam \$15 ; 6 ft spin aluminum dish (no back mounting support) \$50; Hallicrafter HT32A transmitter with manual \$50, Scott Navy WW2 18 KHz-20 MHz receiver \$30 Bill WA6QYR 760-375-8566 bburns@ridgenet.net.

**For Free-** Early Heathkit items- G-2 sine/square wave generator; V-5 VTVM; C-1 condenser checker. Later Heathkit- 5 inch scope O-10

Bill WA6QYR 1-760-375-8566



**Frank, WB6CWN took pictures that the SBMS Christmas Party** at Dennis, W6DQ QTH. Cut and paste the entire URL below into your browser. Its one continuous string. If it gets broken into two lines, cut and paste it as a single line without spaces. Once the web page with pictures appears, hit the slide show button on the top left.

See the Christmas Party Pictures at:

<http://picasaweb.google.com/wb6cwn/2009SBMSChristmasDinner?authkey=Gv1sRgCKCzoIWlxriKQw&feat=email#>

Good luck and MX (Engineering abbreviation for Merry Christmas).

Discussion lead by Wayne N6NB on the changes or consideration of changes to the VUCC rules on the coherence of the media being used to communicate for contests. Several times I've asked at SBMS meetings for input on various contest rule changes that were being considered by the ARRL VHF-UHF Advisory Committee (VUAC). I'm the Southwestern Division representative on this committee.

See below for the official proclamation seeking input from the VUAC.

>>>>>>>>>>>>>>>>PUBLIC STATEMENT>>>>>>>>>>

<http://www.arrl.org/contests/vuac.html>)

[illegible]

### Wayne & SBMS:

I encourage ARRL contest rules to be changed to encourage use of (Non-coherent) LED emitters for optical communications.

I believe that we should be using any non-ionizing electromagnetic radiation: from ranging from "near DC" up to and including Visible light frequencies.

The existing arbitrary requirement for exclusive use of LASERs--for optical communication does not encourage the ham spirit of experimentation.

Steve Bell KJ7OG

One of the very practical issues with laser communications during contest is dealing with ambient light.

I have used a couple low powered lasers that use laser pointers as the light source that worked pretty well. At night, they can do 1km but during the day it is next to impossible point them accurately.

Also, at issue if we require a min distance, more powerful lasers would need to be used. Safety would be a primary concern for both the receiving station and objects (cars, planes etc) that get in the way during pointing.

So, it does sound like we need to define coherent. Otherwise, what difference does the source make if the output is above 300GHz? Does a LED transceiver qualify? If so, couldn't just throw some gel over a spot light to filter out all but one frequency?

I have used our lasers at many public exhibition events allowing kids to "talk over light". They find it fascinating.

Removing them or making it impractical to use them during a contest goes against the spirit of our hobby. I say the more experimentation the better, allow all forms of light communication. Separate them by bands if you like, making the harder ones worth more but allow them all.

Dave N6TEB

Wayne- I believe as long as we can communicate/ get the message through to the receiver and he can respond with a message that can be understood in the same frequency amateur band, and then a contact has been made. Many communication modes are available to us now and the list keeps growing. Some of them may not be coherent waves going through the ether--spark, chirp or other modulations. So what if the sources are not coherent. As long as we can get the message back and forth on an amateur band, then the contact has been made. Getting that communication to be over a kilometer takes it out of the shop or lab. Technology is moving ahead whether we like it or not. Let us amateurs get back to the front in being able to do stuff. Bill WA6QYR

In my opinion coherency should not be an issue. On one end of technology I have done demonstrations sending low data rate digital modes such as Jason using the filament of an 811 vacuum tube using equipment that would certainly reach over 1 km. On the other end I have made PSK31 daylight IR laser contacts over a good number of miles during the 10 GHz & Up Contest. To me the challenge is not always using the most high tech light source but in finding ways to show what can be done with what is available, is technically interesting, challenging and educational. I would push for removing the coherency requirement completely and rather place some very basic minimum requirements on the modulation and detection methods used. Being able to basically communicate at least 1km using light with some form of electronic modulation and detection/demodulation involves enough challenges that that I don't think too many additional restrictions are needed.

That's my two cents worth.

- Kerry Banke N6IZW - SDMG

Check out this web page--[http://ka7oei.com/Coherent\\_versus\\_noncoherent\\_test.html](http://ka7oei.com/Coherent_versus_noncoherent_test.html)

Relative bandwidth may be a more fitting definition than "coherent".

Consider that Part 97 allows DSB AM voice on 160m, which has a bandwidth of 6 KHz / 1800 KHz = 0.33% - so perhaps limiting 300 GHz+ modes for contest / record purposes could stipulate < 0.5% relative BW? That's a 1.5 GHz BW at that freq - ought to be enough for a voice QSO :=}.

73 de Mike W5VSI

Owen Roberts wrote:

Perhaps best to specify percentage of total bandwidth vs. band instead of coherence. I'm a professional laser technician, I'd be glad to come up with a more restrictive rule, if needed.

Meanwhile back to the ranch: <http://www.bluehaze.com.au/modlight/Luxeon.htm>



Steve, N8VKD



Chris, N9RIN; Chuck, WA6EXV; Brian, W6BY; Dick, K6HIJ at the party.

#### Other Threads.

Some of you may know about the MIT Rad Lab series of 28 volumes published around 1947. I have some of them and find them extremely useful. They are quite difficult to find now so the entire set has been scanned. Not all the photos are good, but at least this is free:

<http://cer.ucsd.edu/~james/notes/MIT%20OpenCourseWare/MIT%20Radiation%20Lab/>

73, Jeffrey Pawlan WA6KBL

On Sat, 2009-12-05 at 14:06 -0800, Graham Stratford wrote:

To all, I found a neat filter design page. <http://www.guidedwavetech.com/wgchoose.htm>. I tried scaling the iris designs for other frequencies but the center frequencies were off. To overcome this, I scaled the resonator lengths further while leaving the other dimensions alone. This worked quite well.

Graham Stratford VE3FHM

When scaling you have to take into account the guide wavelength that isn't exactly a straight function of frequency, it also involves the cutoff wavelength or the width of the waveguide.

73, Jerry, K0CQ

Hi Bill, I found the new way of doing printed circuit boards article in QEX Sept/Oct 2008. It looks like a good way to go. Does not require any photo type work and it looks like the resolution is good. I ordered some of the Cut & Peel sheets and will give it a good try. The new Litho film that Freestyle is shipping is not very good now and I have not found any other stores that handle Litho film. Chuck WA6EXV

Here is a web site with lots of data sheets on semiconductor devices that might be of interest to Microwavers.

<http://www.qsl.net/w/w9sz/files/PDFs/>

Hello EMEers

This is a First Call for Papers for the 14th International EME Conference to be held in Dallas, Texas on August 12, 13, and 14th in 2010. The event will be held at the Weston Hotel near the Dallas Ft.Worth airport in Irving. We just recently held Microwave Update at this hotel and the service, rooms and conference facilities were excellent. Hotel details as well as website check-in details will be forthcoming after the first of the year.

In keeping with tradition, the conference will primarily concentrate on EME on the 432 MHz and above bands. At this point, I have several speakers already signed up but we are still actively pursuing talks and papers on various aspects of EME communication. This includes topics such as dish design and feed systems, yagi antenna design, low noise receiving techniques, higher power solid state and tube amplifier design, TWTs, EME expeditions, tracking the moon, evaluating system performance and EME QSO procedures just to name a few. We are also interested in articles for the proceedings even if you are not going to present it at the conference. The ARRL will be publishing the proceedings.

If you are interested in presenting, I would like to hear back from you by the end of December. Please reply to [w5lua@sbcglobal.net](mailto:w5lua@sbcglobal.net). The deadline for papers will be mid June.

The technical talks will be presented on both Friday and Saturday the 13th and 14th of August. While we are enjoying the technical talks, tours will be available by air conditioned buses for the spouses on both Friday and Saturday. We are also planning a tour of the Ft. Worth area on Thursday for both hams and spouses. So plan on arriving by Wednesday evening to take full advantage of all planned activities.

Further information as well as schedule information will be posted on the North Texas Microwave Society [www.ntms.org](http://www.ntms.org) <<http://www.ntms.org/>> by the first of the year.

Best Regards

Al Ward W5LUA [w5lua@sbcglobal.net](mailto:w5lua@sbcglobal.net)

Tony Emanuele WA8RJF [wa8rjf@arrl.net](mailto:wa8rjf@arrl.net)

Barry Malowanchuk VE4MA <[mailto:ve4ma@shaw.ca](mailto:mailto:ve4ma@shaw.ca)> [ve4ma@shaw.ca](mailto:ve4ma@shaw.ca)

December 11, 2009



Tom, WB6UZZ, Larry, K6HLH, Dick, WB6DNX and Paul, KH6HME at the party.





Paul, KH6HME and Dennis W6DQ look at an old receiver in Dennis' collection.



More discussions Dennis, W6DQ, Dick, K6HIJ and Bob, WB6VHS

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast and beyond. Dues are \$15 per year, which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page. If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, [bburns@ridgecrest.ca.us](mailto:bburns@ridgecrest.ca.us), or phone 760-375-8566. The newsletter is generated about the 15<sup>th</sup> of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

San Bernardino Microwave Society newsletter  
247 Rebel Road  
Ridgecrest, CA  
93555  
USA